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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/762,569	01/23/2004	Hans Butler	081468-0307676	3206
909	7590	03/13/2006	EXAMINER	
PILLSBURY WINTHROP SHAW PITTMAN, LLP			KIM, PETER B	
P.O. BOX 10500			ART UNIT	
MCLEAN, VA 22102			PAPER NUMBER	
			2851	

DATE MAILED: 03/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/762,569

Applicant(s)

BUTLER, HANS

Examiner

Peter B. Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 and 21-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 9, 10, 21-23 and 25-28 is/are rejected.
- 7) ☒ Claim(s) 6-8 and 24 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

Applicant's arguments filed on Jan. 13, 2006 have been fully considered.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 5, 21, 25 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Korenaga et al. (Korenaga) (2002/0145721).

Korenaga discloses a method of controlling a position of a mass and a control system that controls a position of a mass by applying a control force to said mass in accordance with a desired mass acceleration, said control system comprising: a first input (121) that receives a signal based on a desired position of said mass (para 0052); a second input (128) that receives a feedback signal indicative of an actual position of said mass (para 0054); a comparator unit (126) configured to determine a signal indicative of a difference between said desired mass position and said actual mass position (para 0054); a control unit (132-134) configured to produce a signal indicative of said control force based on said difference between said desired mass position and said actual mass position; an estimator unit (122, 123) configured to calculate an estimated relation between said control force and status information of said mass, said status information comprising an indication of at least one of a position of said mass, a velocity of said mass, and an acceleration of said mass (para 0053, 0054); and a third input (131) that receives a feed-forward signal indicative of said desired mass acceleration, wherein said control system

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determines said control force based on said estimated relation and said desired mass acceleration (para 0055-0063).

Claims 1 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Tiedtke et al. (DE 43 29 484).

Tiedtke disclose in Fig. 1, a method of controlling a position of a mass and a control system that controls a position of a mass by applying a control force to said mass in accordance with a desired mass acceleration, said control system comprising: a first input that receives a signal based on a desired position of said mass; a second input that receives a feedback signal indicative of an actual position of said mass; a comparator unit configured to determine a signal indicative of a difference between said desired mass position and said actual mass position; a control unit configured to produce a signal indicative of said control force based on said difference between said desired mass position and said actual mass position; an estimator unit (abstract) configured to calculate an estimated relation between said control force and status information of said mass, said status information comprising an indication of at least one of a position of said mass, a velocity of said mass, and an acceleration of said mass; and a third input that receives a feed-forward signal indicative of said desired mass acceleration, wherein said control system determines said control force based on said estimated relation and said desired mass acceleration (page 2, lines 51-62, page 4, lines 17-46).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 22, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Korenaga et al. (Korenaga) in view of Kurosawa (2002/0145716).

Korenaga discloses the claimed invention as discussed above; however, Korenaga does not disclose estimator that uses a least-square method. Kurosawa discloses using the least-square method. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the least-square method of Kurosawa to the invention of Korenaga in order to prevent sync error as taught by Kurosawa in para 0059.

Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Korenaga et al. (Korenaga) in view of Kurosawa as applied to claim 3 above, and further in view of Cutler (20010029674).

The further difference between the claimed invention and the modified Korenaga is removing an offset of the control force by using a filter. Cutler discloses using a high-pass filter in para 0038. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the high pass filter of Cutler to the invention of Korenaga in order to keep the mass stable as taught by Cutler in para 0038.

Claims 9, 10, 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Korenaga et al. (Korenaga) in view of Cutler.

Korenaga discloses the claimed invention as discussed above; however Korenaga does not disclose using a filter. Cutler discloses using a high-pass filter in para 0038. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the high pass filter of Cutler to the invention of Korenaga in order to keep the mass stable as taught by Cutler in para 0038.

#### ***Allowable Subject Matter***

Claims 6-8 and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

None of the prior art of record teaches or discloses the estimator unit as claimed in claims 6 and 24 in combination with the control system of claim 1 and the method of claim 21.

#### ***Response to Arguments***

Applicant argues that there is no way that the output of the calculating means is supplied to the feed-forward system 131. However, the language of the claim is directed to the desired mass acceleration is inputted to the feed-forward signal which is shown in Korenaga in Fig. 2.

Regarding Tiedtke reference, applicant is reminded that the references is cited on the IDS submitted by applicant which was most likely based on European Search Report. It would seem that applicant should have a better idea of the relevance of the reference.

#### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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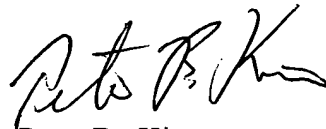
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter B. Kim whose telephone number is (571) 272-2120. The examiner can normally be reached on 8:00 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Peter B. Kim", is positioned above the printed name.

Peter B. Kim  
Primary Examiner  
Art Unit 2851

March 3, 2006